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Multifunction Data Port

Reply to Office Action of 11/02/2006

REMARKS

Per the Office Action of 11/02/2006, the Inventor of the present multi function data port has amended Claims 30-58, and added Claim 59, and addressed Arguments distinguishing the present invention from prior art to the Examiner as to why claims 30-33, 36, 37, 39 and 41 should not be rejected but should be allowed as currently amended.

Additionally, Claims 34, 35, 38, 40 and 42-58, while temporarily withdrawn, are now each "Withdrawn currently amended" and therefore the Inventor-Applicant for the present invention seeks by this/these Response, Arguments and currently amended Claims to have granted the patent applied for in September 2001.

All references to Patent Specifications refer to pages 31 to 51 in the Amendment filed June 10, 2005. This amendment clarified earlier specifications at the request of the Examiner and the Amended Specifications do not include new matter. The Examiner has had the opportunity to review said Specifications during the past twenty months and the Applicant has not received any notice that the Examiner has found new matter in, or has any objections to, said Specification filed on June 19, 2005.

In the 1/29/2007 telephone interview, the Examiner requested a definition of the term, "broadband". Broadband is a term of art. Farlex's Computing Dictionary defines broadband as: "High-speed transmission. The term is commonly used to refer to Internet access via cable modems or DSL, which is faster than dial-up. For years, "broadband" has referred to a higher-speed connection, but the actual speed threshold has varied. While T1 (1.5 Mbps) has been widely used as the threshold, others have used T3 (45 Mbps) for broadband"

As cited by the Examiner in the Response of 11/02/2006, a patent by Tracy, et al., 6,150,955, "Apparatus and method for transmitting data via a digital control channel of a

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digital wireless network," Nov.2000, teaches an improved electric meter which remotely monitors and controls data "and other information from utility and other devices".

In the present invention Specifications of the Applicant, there are seven references to "broadband". Tracy's use of the telephone control channel would limit his data rate to lower rates than even the fifty six kilobits per second for typical telephone dial up modems. Tracy's data rates are many orders of magnitude slower than the broadband rates of said multifunction data port. Claims 30 and 31 herein have been amended to include references to broadband data rates in excess of 1.0 megabits per second and more clearly distinguish the said multifunction data port from automatic meter reading devices such as Tracy.

In Claim 1, Tracy teaches, "An apparatus for transmitting data via a digital control channel of a digital wireless network, the digital wireless network including a base station controller and at least one base transceiver system associated with the base station controller, the apparatus comprising: a universal meter reader having meter data associated therewith, the universal meter reader further having an address..."

In the present invention, the use of the control channel of a digital wireless network is never referenced because the present invention contemplates its use as a data port connected to, located near, or embedded in, an electric meter said invention being primarily engaged in data exchange at multi-megabit speeds over a broadband digital services network, which may include wireless communication channels, but not control channels since the control channel cannot be used for broadband communications due to its inherent bandwidth limitations. In any case, the present invention represents an improvement in usefulness and novelty over Tracy's invention, particularly since the data port in the present invention is a multi-function device as described herein and in the presently amended claims, said data port providing a synergy of

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uses addressing a need for the user and the utility to employ a secure device within the utility infrastructure.

The "base station controller and the base transceiver system associated with the base station controller" of Tracy in Tracy's claim 1 with "a universal meter reader further having an address" is also easily distinguishable from the present data port invention. As noted in the present invention's Drawings and Specifications at Figure 3, said data port is a dynamic device, with several properties beyond its ability to simultaneously function—in one unit-- as a transceiver and a base station controller as well as a meter reader, and is therefore an improvement over Tracy in both function, i.e. usefulness, as well as form.

In one embodiment of the invention that is shown in Figure 3, the Multifunction Data Port (370) contains a Network Interface (372) connected to Internet & Digital Service Providers (360) via a multiplicity of digital signal channels (362, 364, 366, and 368). Said Network Interface receives and transmits video signals to the Video Processor (390) and said video signals are sent to the House Interface (374) for transmission to the House (330) over signal lines (338, 229). Alternatively scrambled video signals can be sent to Descrambler (396) which can unscramble video signals on command of the Internet Router & Computer (398) when said House is authorized to receive a "pay per view" video signal or for confidential video conferencing.

The ability of said Multifunction Data Port to receive and transmit digital signals from a multiplicity of channels, to process said signals at video data rates, to select and descramble said selected video signals for confidential video conferencing are clear improvements over the teaching of Tracy cited by the Examiner; it is also a significant distinction that Tracy relies on the wireless control channel and the present invention of the data port does not. Indeed, video

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and voice signals cannot be sent on the control channel of a wireless network due to inherent bandwidth limitations of the control channel. To compare the present invention to the meter reading device of Tracy is akin to comparing the telegraph to the telephone and claim the latter is negated by the former as prior art since both use electrical pulses for communication.

The embodiment shown in said Figure 3 of the present invention also shows a modem processor (392) connected to the Internet via said Network Interface and said digital signals channels. The said modem processor is shown connected to said Internet Router and Computer with Memory Storage (399) and said household interface and it can select, receive and transmit digital data from the Internet at said broadband data rates. Said modem coupled with said Network Interface and said Internet Router & Computer can permit switching between digital signal channels, digital service providers and between various Internet addresses. Said Specifications make explicit reference 18 times to the word "router", 27 times to "Internet", 5 times to "multimedia" and 7 times to "broadband" and 19 times to video. Internet routers are defined as devices that select multimedia from the Internet at said broadband data rates.

The limitations of Tracy, due to bandwidth and Tracy's inability to select multiple service providers are in sharp contrast to the Internet capabilities of said Modem and said Internet Router of the present invention, and thus the present invention is novel and useful on its own terms, as well as being a vast improvement in function as well as form over Tracy.

The present invention's embodiment shown in said Figure 3 also shows a voice processor (394) connected to the Internet via said Network Interface and said digital signals channels. The said voice processor is shown connected to said Computer with said Memory Storage and with said house via said household interface and said household signal and power lines (332). One of the house signal lines (338) is a standard internal telephone line which

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enables the use of standard telephones (not shown) to send voice signals over the Internet and over the cellular telephone network via wireless signal channels (361& 362). Said Voice Processor can select wireless cellular transmission configurations such as global system for mobile, GSM, and time division multiple access, TDMA, as well as code division multiple access, CDMA, and for the control channel and the seven channels used for voice and data transmission, as well as using wireless spectrum in the public service and owned or leased frequencies. Triangulation of cellular signals provides one means to detect the location of the cellular transmissions by said Multifunction Data Port. Said Voice Processor can also select with said Internet Router and Computer the said Internet and Digital Services Network Provider for Video, Telephone and Voice over Internet Protocol, VoIP, for long distance telephone calls, or for any telephone calls, which also distinguishes the present invention from Tracy.

The ability of said Multifunction Data Port to provide wireless cellular telephone service, or any wireless service in any wireless spectrum, that permits the use of standard land line telephones in said House, distinguishes itself from Tracy because the data port itself would comprise the cellular phone or other wireless apparatus, which might, but not necessarily, include a control channel but would not specifically use the control channel to transmit or receive meter data as is the case with Tracy. The present invention also does not claim to teach a new method of reading meters, particularly non-digital meters as Tracy teaches, but instead claims, specifically in currently amended Claims 1, 30, 42 and in 52 a method or methods of reading particular meter data in real time and on a continuous real time basis so as to provide the utility and utility user with valuable data on the household's use of electricity and also on the electricity being transmitted and distributed on the power grid to the utility user—things

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such as Fourier analysis which Tracy does not teach. Tracy is only able to measure average power use over extended periods of time. Therefore, these methods of the present invention, as well as the apparatus to deliver said methods, are novel and useful beyond Tracy, and are so specific and distinct in their novelty and usefulness that these methods do not seek even to improve on Tracy's methods.

Moreover, the data port invention provides a means to select various communication channels and the use of voice over Internet protocol, VoIP, for voice calling over both wireless and wireline modes, as well as broadband over powerline, BPL. The data rates of the present invention and the modes of transmitting and receiving data within the same device in the present invention are clearly improvements over, and more novel and useful than, the invention taught by Tracy. Tracy teaches the use of the cellular control channel which is bandwidth limited and it is not even useful for the dial up telephonic modems typically used for data transmission which could transmit at the rate of 56 kilobits per second.

The embodiment shown in said Figure 3 of the multi function data port also shows a Meter Interface (384) connected to Utility Meter (380) and to the Internet via said Network Interface and said digital signals channels. The said Meter Interface is connected to said Computer and said Household Interface; this enables it to select, receive and transmit digital data from said utility meter to said household and the said electric utility (320). The said Meter Interface can receive and process continuous readings of current and Voltage by said Utility Meter. The ability to provide real time, continuous-- and not periodic (as in Tracy and Frew)-- readings of current and Voltage, permits the determination of peak demand, harmonic analysis and power factor of the electric power delivered to said user. The ability of the present invention to provide real time, continuous reading by said Meter Interface provides means to

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detect the peak demand used for demand pricing by the Electric Utility (320) as well as measure the power factor, Voltage spikes and harmonics from solid state digital processors and set top boxes and home electronics in said House, conditions which can degrade digital grade power suitable for said home electronic circuits---clearly distinctive and a vast improvement over the periodic reading technology taught by Tracy, and Gasouniotis ,et. al (cited in Tracy), 4,940,976, Jul.1990..

Said Meter Interface in the present invention is connected to Circuit Breaker Box (388) via said House Interface and this provides means to reduce the electric load at times of peak demand, another clear distinction from Tracy.

The ability of said Multifunction Data Port to provide the detailed continuous real time measurements of current and Voltage by said Meter Interface permits the said Electric Utility to measure and monitor harmonics and peak demand and provide better control of its power distribution system as specified in the last two paragraphs of page 40 and all paragraphs of page 41 of the Specifications filed June 10, 2005. In contrast, Tracy teaches methods including one to count the rotations of an armature in a mechanical utility meter, seen in Tracy Figure 7. Tracy can only provide data on average power use over times at very long intervals compared to 60 Hertz power frequencies and harmonics which can be detected in real time by the present invention. Tracy does not teach the ability to detect the peak demand, Voltage spikes, power surges and harmonics, which can degrade the quality of the electrical power provided by said electric utility, as described above, to said utility users' households. The utility providers' access to valuable real time current, Voltage and harmonics data is thus enabled by the present invention. These data have become increasingly important with the proliferation of solid state switching devices and digital signal processors, the efficiencies of which conflict with limits on

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power distribution systems, e.g. outages and brownouts, which cause billions of dollars a year in damages to the millions of embedded said digital signal processors found in said home electronics.

A new claim, 59, has been added herein to include the features delineated in the said Specifications of the present invention. The fourth paragraph on page 44 of said Specification teaches the ability of said dataport to calculate harmonics via Fourier analysis. The last three paragraphs on page 44 and all of page 41 deal with load management by said electric utility and communication with its customers as in Claims 30 and 59 herein. Computer analysis of said Specifications identifies three references to harmonics as well as three references to power factor. Harmonics and power factor are both important to the load management of the power grid and neither are taught by Tracy, as explained above.

Notwithstanding all of the revisions explained herein, the Applicant respectfully refers to and relies upon section 806.05(a) of the Manual of Patent Examining Procedure which states: "Relative to questions of restriction where a combination is alleged, the claim thereto must be assumed to be allowable (novel and unobvious) as pointed out in MPEP sec. 806.02 in the absence of a holding by the examiner to the contrary. When a claim is found in a patent, it has already been found by the Office to be allowable and must be treated on that basis."

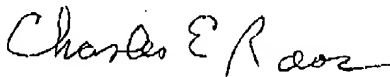
Additionally, the Applicant continues to rely on sec. 802.05, "Where the relationship between the claims is such that the separately claimed sub combination B_{sp} constitutes the essential distinguishing feature of the combination AB_{sp}/B_{sp} as claimed, the inventions are not distinct and requirement for restriction must not be made, even though the sub-combination has separate utility,"

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The Examiner has not objected to either the Claims or said Specifications when he raised the issue of restriction and the Applicant continues to assume the Examiner has no objections at this date. The specific elements, in several embodiments, which provides an essential distinguishing feature of the present invention are the security features of the multifunction data port. Said Specifications show that the word "financial" is used five times in addition to the use of "security" and "encryption" mentioned earlier. Said multifunction data port is a device that teaches a method to prevent Identify theft and Internet fraud. It can be noted that the U. S. government has required banks to take measures to provide positive identification of the computer used for financial transactions and that some twenty five percent of computer users do not use the Internet for financial transactions due to fear of possible fraud. The said Specifications identify said multifunction data port as a secure terminal for financial transactions. There is an officially recognized need for devices and methods that can provide secure financial transactions over the said Internet or an intranet-- with the said features provided by said multifunction data port acting as a secure terminal, thereby providing positive identification of said data port's location and the ability to encrypt said data port's communications, according to the amended Claims herein.



Charles E. Roos: February 19, 2007